Abstract

Methods and systems for a PLD-based network update transport (PNUT) protocol that utilizes UDP and other protocols for transmitting update or other commands or information over a packet-based or IP network. PNUT is a hardware-based network communication protocol that does not require the full TCP/IP stack and may be utilized for exchanging commands and information with such PLD-based and other devices. Protocols may include a set of core commands and a set of custom commands. Logic components within the PLD-based devices may consist of a command dispatcher, a transmitter/controller, a MAC receiver, a MAC transmitter, a packet parser, a packet generator, and core receiving and transmitting commands. The present invention may be implemented without requiring CPU cores, special controllers, stringent timings, or operating systems as compared with conventional network protocols. Various methods for exchanging and updating PNUT commands are disclosed. The methods and systems of the present invention may be utilized to provide other functions, such as filtering, logging, polling, testing, debugging, and monitoring, and may be implemented between a server and a PLD-based device or solely between PLD-based devices.